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CASE REPORT

Pelvic haematoma following blunt trauma without evidence of fracture or penetrating injury: A case report☆

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Case report

A 34-year-old male presented to the Emergency Department after falling 15 foot from a ladder onto his back. On initial assessment the patient's vital signs were stable. Significant findings on examination were tenderness of the lumbar spine, lower abdomen and pelvis, and fullness in the suprapubic region. Initial radiographs did not demonstrate a pelvic fracture and a CT scan was performed given the history and clinical signs. This showed a large left pelvic side wall haematoma measuring 10 cm × 7.5 cm displacing the bladder and bowel to the right, extending up to the level of the umbilicus. In addition active bleeding was seen within the haematoma (Figs. 2 and 3). No bony injury was identified in the pelvis or vertebrae (Fig. 1).

The patient developed signs of hypovolaemia and increasing abdominal distension in keeping with ongoing bleeding. Angiography was therefore performed with a view to embolisation of any bleeding vessel. At angiography an area of contrast extravasation was seen from a small medial branch of the anterior division of the internal iliac artery which was embolised using gelfoam. After the procedure the patient was taken up to the intensive treatment unit (ITU) where he remained stable.

During the patient's stay on ITU an infusion of intravenous heparin was started due to the high risk of deep vein thrombosis from the compression to the femoral and iliac veins by the pelvic haematoma. Shortly before being discharged from the ITU the patient developed central chest tightness but subsequently underwent a negative CT pulmonary angiogram. Two weeks following discharge from hospital the patient collapsed due to a significant PE requiring admission and anticoagulation. He has subsequently made a full recovery.

Discussion

Bleeding associated with pelvic fracture is common and guidelines have been drawn up for managing this condition [3]. The mechanism of haemhorrage in such fractures is thought to be due to bleeding from the surfaces of the fracture and lacerations to venous structures, with arterial bleeding being a less common cause of blood loss [4]. In pelvic trauma associated with fracture 13% of patients have a significant haemorrhage requiring embolisation [6], with the internal iliac artery or its branches being involved in 90% of these injuries [7]. Arterial bleeding from branches of the iliac arteries without evidence of fracture or penetrating injury is rare and a search of the literature revealed only one other reported case [1]. In the case described we believe that shearing forces caused by rapid deceleration are responsible for the vascular injury.

In the vast majority of haemodynamically unstable trauma patients with internal bleeding prompt fluid resuscitation

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Figure 1 CT showing left sided pelvic wall haematoma (single arrow) with multiple areas of contrast enhancement (double arrows) within it indicating ongoing haemorrhage.

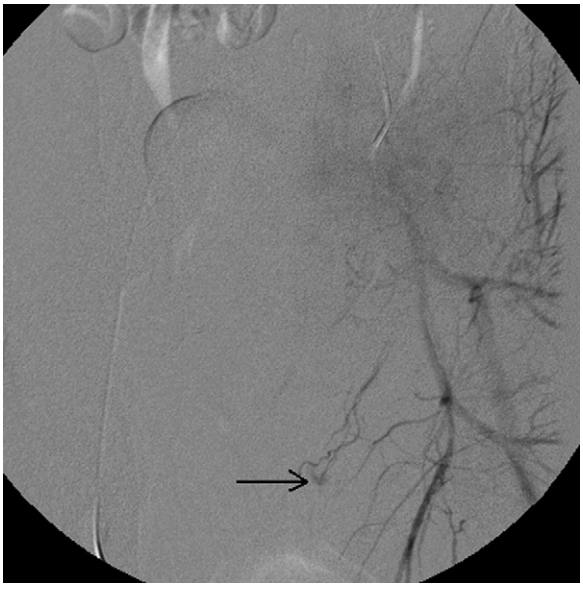

Figure 2 Angiogram demonstrating extravasation of contrast from an internal iliac artery branch.

and surgery remains the mainstay of treatment. In bleeding involving the deep pelvic vessels however, embolisation is extremely effective, even in unstable patients. Surgical access to this region of the body is anatomically difficult and there is a risk of disrupting the tamponading effect of a haematoma if this kind of vascular injury is treated with surgery. Embolisation has been shown to be more effective than internal iliac ligation [5], and a success rate of 96% has been reported in patients undergoing this treatment for bleeding associated with pelvic fracture [2]. Transcatheter embolisation can also be performed for isolated solid organ injuries both traumatic and iatrogenic.

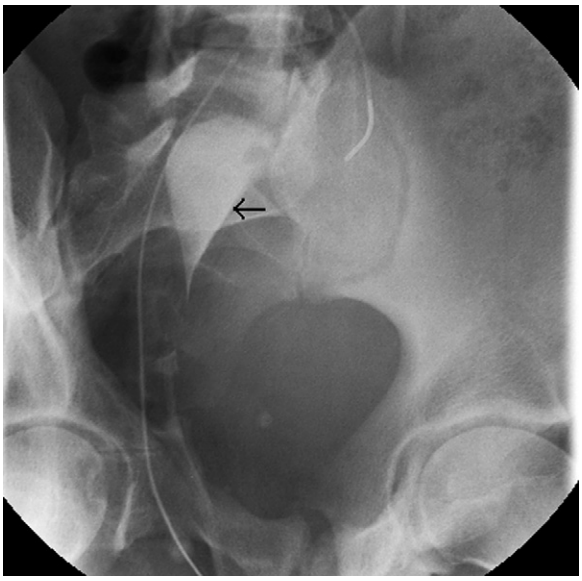

Figure 3 Angiogram showing bladder filled with contrast displaced to the right by pelvic haematoma.

Conclusion

Although rare, arterial injury causing a pelvic haematoma can occur without associated bony or penetrating injury. Doctors treating haemodynamically unstable patients following blunt trauma should consider this diagnosis, even if there is no evidence of fracture on radiography, and should be aware that radiological management is an effective treatment strategy.

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